



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,246	01/28/2004	Lakshmana Rao Chintada	101948016US1	4788

54499 7590 10/23/2006

WOODCOCK & WASHBURN LLP  
ONE LIBERTY PLACE  
46TH FLOOR  
PHILADELPHIA, PA 19103

EXAMINER

TORRES, JOSEPH D

ART UNIT PAPER NUMBER

2133

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/767,246

Applicant(s)

CHINTADA ET AL.

Examiner

Joseph D. Torres

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-15, 19, 20 and 32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-15, 19, 20 and 32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 5, 6, 8-15, 19, 20 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanerva; Mikko et al. (US 5930233 A, hereafter referred to as Kanerva) in view of Matsumoto; Shinji (US 5539923 A).

35 U.S.C. 103(a) rejection of claims 5, 11 and 19.

Kanerva teaches at a data receiving unit, identifying a failure to successfully receive a frame sent over a first channel from a data sending unit implementing a sliding window under the sliding window protocol (col. 3, lines 25-27 in Kanerva; col. 4, lines 54-58 in Kanerva teaches that traffic channels are established for transmitting data between

Art Unit: 2133

base and mobile stations, that is, a traffic channel is a first channel; Note: a missing frame is a lost frame), wherein the lost frame has a sequence number (col. 5, lines 42-44 in Kanerva); establishing a second channel between the data sending unit and the data receiving unit (Figure 2 in Kanerva teaches multiple channels are established; col. 4, lines 54-58 in Kanerva teaches that control channels are established for signaling between base and mobile stations, that is, a control channel is a second channel); and sending a request for retransmission of the lost frame over the established second channel (a request for retransmission is a control signal; col. 4, lines 54-58 in Kanerva teaches that control channels are established for signaling between base and mobile stations), and wherein use of the second channel allows the sliding window at the data sending unit to be advanced beyond the sequence number of the lost frame prior to receiving an acknowledgement of receipt of the lost frame from the data receiving unit (col. 1, lines 52-55 in Kanerva teaches that a "window represents a sliding sequence of successive frames that have been sent but have not yet been acknowledged (a transmission window)"; col. 6, lines 7-13 in Kanerva teaches that the window is slid forward after receiving frames 1 and 2 the window is slid forward and frames 5, 6 and 7 are buffered prior to receiving frames 3 and 4 and prior to receiving an acknowledgment thereby avoiding a unnecessary retransmissions of frames 3 and 4, if they are received at a later time out of order).

However Kanerva does not explicitly teach the specific use of establishing a second channel between the data sending unit and the data receiving unit responsive to the identifying step.

Art Unit: 2133

Matsumoto, in an analogous art, teaches use of establishing a second channel between the data sending unit and the data receiving unit responsive to the identifying step (Steps 152-160, 182, 183 in Figure 11 of Matsumoto are a means for establishing a second idle channel CH between the data sending unit and the data receiving unit responsive to the identifying step 181 in Figure 11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kanerva with the teachings of Matsumoto by including use of establishing a second channel between the data sending unit and the data receiving unit responsive to the identifying step. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of establishing a second channel between the data sending unit and the data receiving unit responsive to the identifying step would have provided enhance utilization efficiency of the frequency by the processing diversified to the respective base stations (col. 5, lines 55-59 in Matsumoto).

35 U.S.C. 103(a) rejection of claims 6 and 12.

A logical tunnel channel is a virtual channel in a network not necessarily comprised of wireline communication channels. Col. 4, lines 54-58 in Kanerva teach that a control channel is a virtual channel in a network not necessarily comprised of wireline communication channels made up of time slots; hence the control channels in Kanerva are substantially logical tunnel channels.

35 U.S.C. 103(a) rejection of claim 8.

See Steps 307 and 311 in Figure 3 of Kanerva.

35 U.S.C. 103(a) rejection of claims 9, 13 and 15.

See col. 6, lines 3-6 of Kanerva. Note: a reception window is a receive window.

35 U.S.C. 103(a) rejection of claim 10.

Col. 6, lines 58-67 in Kanerva teach that data rates are variable and depend on data rate requirements at the receiving end.

35 U.S.C. 103(a) rejection of claim 14.

See Steps 307 and 311 in Figure 3 of Kanerva. See col. 6, lines 3-6 of Kanerva. Note: a reception window is a receive window.

35 U.S.C. 103(a) rejection of claim 20.

Col. 8, lines 62-67 in Kanerva teach that a timer can be used.

35 U.S.C. 103(a) rejection of claim 32.

Kanerva teaches at a data receiving unit, identifying a failure to successfully receive a frame sent over a first channel from a data sending unit implementing a sliding window under the sliding window protocol (col. 3, lines 25-27 in Kanerva; col. 4, lines 54-58 in

Art Unit: 2133

Kanerva teaches that traffic channels are established for transmitting data between base and mobile stations, that is, a traffic channel is a first channel; Note: a missing frame is a lost frame), wherein the lost frame has a sequence number (col. 5, lines 42-44 in Kanerva); establishing a second channel between the data sending unit and the data receiving unit (Figure 2 in Kanerva teaches multiple channels are established; col. 4, lines 54-58 in Kanerva teaches that control channels are established for signaling between base and mobile stations, that is, a control channel is a second channel); and sending a request for retransmission of the lost frame over the established second channel (a request for retransmission is a control signal; col. 4, lines 54-58 in Kanerva teaches that control channels are established for signaling between base and mobile stations), and wherein use of the second channel allows the sliding window at the data sending unit to be advanced beyond the sequence number of the lost frame prior to receiving an acknowledgement of receipt of the lost frame from the data receiving unit (col. 1, lines 52-55 in Kanerva teaches that a "window represents a sliding sequence of successive frames that have been sent but have not yet been acknowledged (a transmission window)"; col. 6, lines 7-13 in Kanerva teaches that the window is slid forward after receiving frames 1 and 2 the window is slid forward and frames 5, 6 and 7 are buffered prior to receiving frames 3 and 4 and prior to receiving an acknowledgment thereby avoiding a unnecessary retransmissions of frames 3 and 4, if they are received at a later time out of order).

Art Unit: 2133

However Kanerva does not explicitly teach the specific use of establishing a second channel between the data sending unit and the data receiving unit responsive to the identifying step.

Matsumoto, in an analogous art, teaches use of establishing a second channel between the data sending unit and the data receiving unit responsive to the identifying step (Steps 152-160, 182, 183 in Figure 11 of Matsumoto are a means for establishing a second idle channel CH between the data sending unit and the data receiving unit responsive to the identifying step 181 in Figure 11).

In addition, Step 167 in Figure 11 of Matsumoto teaches closing the second channel upon successful receipt and acknowledgement of the lost frame.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kanerva with the teachings of Matsumoto by including use of establishing a second channel between the data sending unit and the data receiving unit responsive to the identifying step. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of establishing a second channel between the data sending unit and the data receiving unit responsive to the identifying step would have provided enhance utilization efficiency of the frequency by the processing diversified to the respective base stations (col. 5, lines 55-59 in Matsumoto).



2. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanerva; Mikko et al. (US 5930233 A, hereafter referred to as Kanerva) and Matsumoto; Shinji (US 5539923 A) in view of Leermakers; Rene (US 6928468 B2).

35 U.S.C. 103(a) rejection of claim 7.

Kanerva and Matsumoto substantially teaches the claimed invention described in claims 5 and 6 (as rejected above).

However Kanerva and Matsumoto does not explicitly teach the specific use of retransmitting missing data in the second channel, i.e., the control channel.

Leermakers, in an analogous art, teaches use of retransmitting missing data in the second channel, i.e., the control channel (Claim 10 in Leermakers teaches retransmitting missing data in a return control channel).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kanerva and Matsumoto with the teachings of Leermakers by including use of retransmitting missing data in the second channel, i.e., the control channel. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of retransmitting missing data in the second channel, i.e., the control channel would have provided a means for avoiding use of a noisy channel.

***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JOSEPH D. TORRES  
PRIMARY EXAMINER  
TECHNOLOGY CENTER 2100

Joseph D. Torres, PhD  
Primary Examiner  
Art Unit 2133